Multiple Magazine Holder

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Multiple Magazine Holder

Introduction

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Scope

- Sarco was awarded a fixed price contract to produce 16,800 Multiple Magazine Holders (MMHs) for the Department of the Army
- MMHs were specified for use with 30 round magazines in M16 series rifles and the M4 Carbine
- Militarized version was based on an off-the-shelf non-development item (NDI)

Contract was in accordance with purchase description AR-PD-119B for Multiple Magazine Holder

MMH Product Background

- Need for MMH grew from field requirement to rapidly employ increased firepower
- Combatants typically relied on improvised methods

MMH Product Background (2)

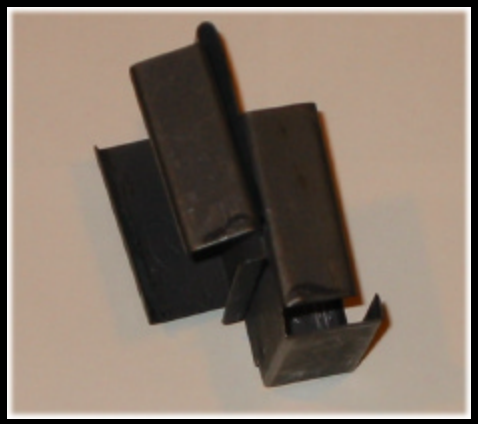
- Field improvisations created issues
  - Magazine contamination
  - Cartridge feeding problems
  - Jammed weapons

MMH Product Background (3)

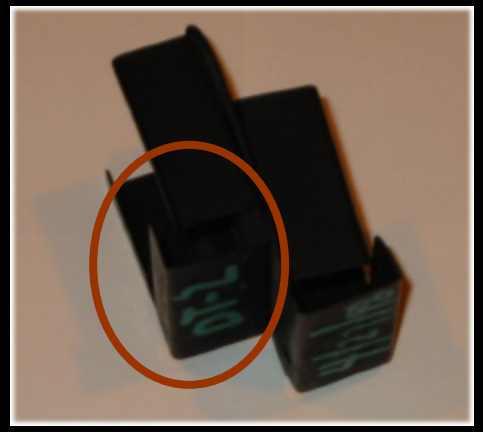
- Existing commercial off the shelf product met user requirements, however Sarco identified potential improvements for product militarization
- During preliminary in-house drop testing, the impact affected the left magazine bottom plate and spring

MMH Product Improvement

- Primary design change – the bottom of the left side MMH was extended to protect the magazine



Commercial MMH



Militarized Version

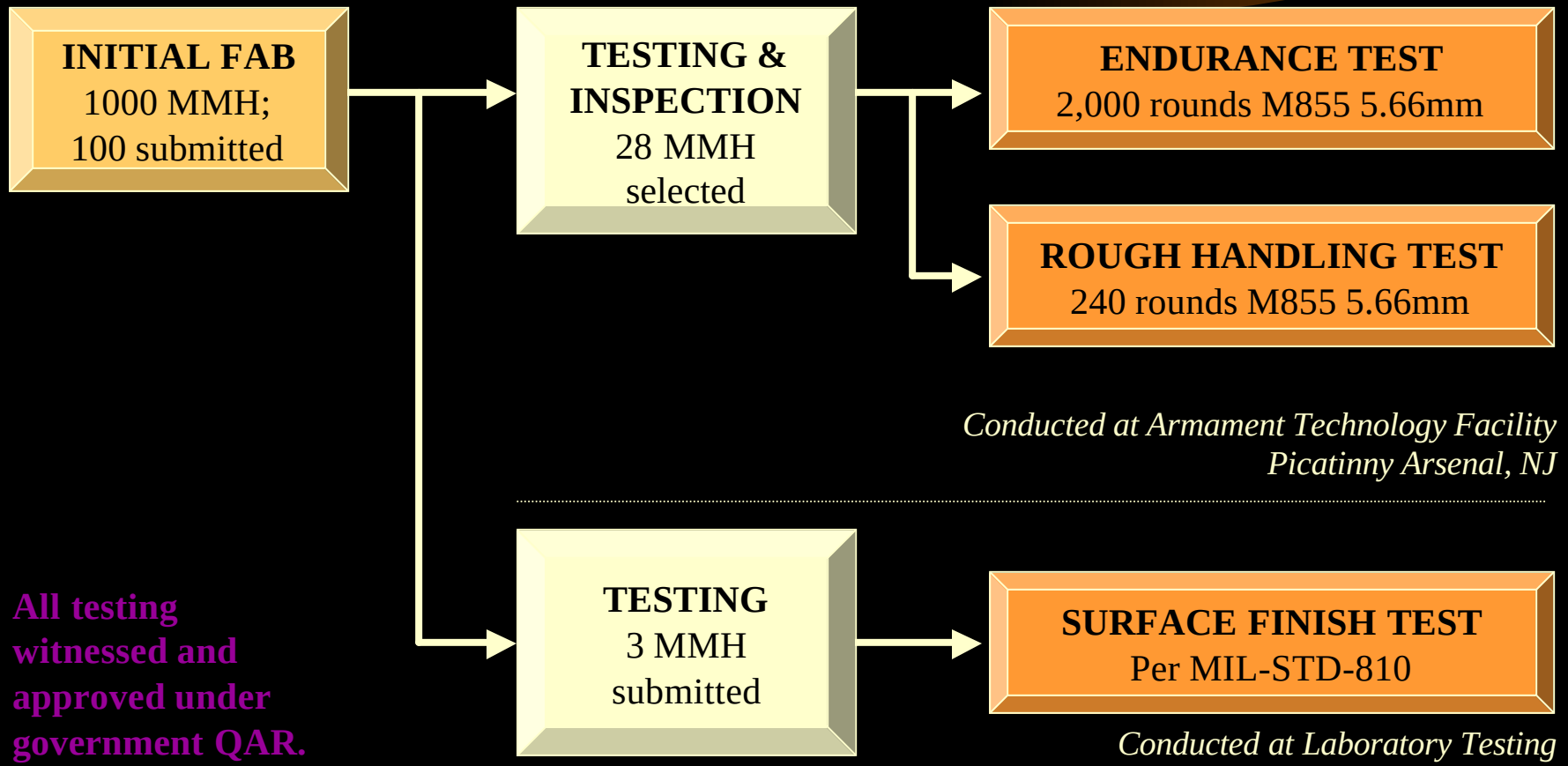
Fabrication Approach

- Complete engineering process for fabrication was established by Sarco engineering
  - Selection of desired strip materials and properties
  - Design of punch and die tooling necessary to blank and form MMH
  - Spot welding the formed part
  - Heat treating to obtain proper hardness gradient
  - Selection of an acceptable protective coating
  - Development of specified packaging

Test Measures

- First Article Inspection
  - Materials construction and design
  - Packaging inspection
  - Interfaces
  - Weight
  - Final protective finish
  - Endurance at ambient
  - Rough handling
  - Workmanship
  - Capacity
  - Magazine change time
  - Weapon vertical profile
  - Magazine and feed orientation

Testing Process



All testing witnessed and approved under government QAR.

Test Results

Measure	Requirement/ Notes	Test Result
Materials, Construction & Design	No formal design and construction specs.	**N/A**
Packaging Inspection	MMH is packaged in box marked with national stock number, applicable bar coding. Includes protective wrap and instruction sheet. NSN 1005-01-425-5677	**Pass**
Interface	MMH was tested with fully loaded GFM 30-round magazines as used in the M16 series rifles and M4 carbines. No special tools are required to mount and detach from the weapon.	**Pass**
Weight	MMH cannot exceed 5 ounces. Actual weight is 2.99 – 3 ounces.	**Pass**

Test Results(2)

Measure	Requirement/ Notes	Test Result
Final Protective Finish	The MMH shall have - Non-reflective finish - Color (lusterless flat); approximately black - Corrosion resistance* - Preferred finish – phosphate (zinc)	 **Pass** **Pass** **Fail*** **Met**
Endurance at Ambient	Four MMHs and two M16A2 rifles were used. There was no degradation of performance in the weapons or MMHs.	**Pass**
Rough Handling	Two MMHs were assembled to two magazines fully loaded with inert ammunition, and each was dropped from an M16A2 rifle. The MMHs were then fired in accordance with test procedures.	**Pass**
Workman-ship	MMH meets the applicable workmanship standards noted in MIL-W-13855.	**Pass**

*MMH fails as result of rust (bleeding) from inside bent flange; all surfaces in direct contract with magazine passed corrosion tests

Test Results(3)

Measure	Requirement/ Notes	Test Result
Magazine Change Time	Time to change from the first magazine to the second shall not exceed 5 seconds for both right and left-handed shooters. The average time measured during endurance tests was < 3.0 seconds.	**Pass**
Magazine Feed and Orientation	The Sarco MMH, when assembled to two magazines and attached to the M16A2, by design orients the external magazine in the same direction as the magazine loaded into the weapon.	**Pass**

Test Results(3)

Measure	Requirement/ Notes	Test Result
Weapon Vertical Profile	The vertical profile when magazines are loaded into the M16A2 must be less than 11.2 inches. The Sarco militarized MMH creates a weapon profile of 10.62 inches (left magazine loaded), and 10.00 inches (right).	**Pass** 
Capacity	MMH shall hold two thirty round magazines.	**Pass** 

MMH Production

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A U.S. Army 82nd Airborne paratrooper holds his gun while catching a nap at the Tirana, Albania, airport. Several hundred paratroopers are assigned to protect Apache attack helicopters, which are expected to arrive soon.

- 16,800 militarized MMHs were produced by Sarco and delivered to the Department of the Army
- Newspaper clipping depicts deployment of MMH in the field

Contact Information

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